Racial Differences in Retention in Residential Substance Abuse Treatment: The Impact on African American Men

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Abstract:

Purpose: This study employed a static group comparison design with 106 men in residential treatment to examine the relationship of race to treatment retention.
Methods: A retrospective analysis of retention, by race, including survival analysis, was undertaken.
Results: Findings from the study indicated that (a) Caucasian men complete treatment more frequently than African American men, (b) Race was not predictive of time in treatment, and (c) that race was a factor in the receipt of both criminal justice coercion and case-management both of which were strong predictors of time in treatment.
Conclusions: Race serves as a factor in the receipt of services related to retention. Future research should focus on further exploration how race impacts retention, and the interaction of race with coercion and the receipt of case-management.
Keywords: substance abuse, treatment retention, race, attrition, case-management, coercion, African American, disparities

Article:

There is a growing awareness of general racial disparities in access to health care that disproportionately affects African Americans (Institute of Medicine, 2003). Although these disparities are important to the larger African American community, there appear to be further disparities that primarily affect African American drug misusers. African Americans experience substance dependence and abuse at rates slightly higher, but generally comparable to Caucasians, 9.5% versus 9.3% (Substance Abuse and Mental Health Services Administration [SAMHSA], 2004a). Despite these comparable rates, African Americans enter treatment at disproportionately higher rates, as African Americans account for 12% of the population, but 24% of treatment admissions (SAMHSA, 2004b). Although disparities in abuse and treatment entry exist, it is also important to note that in the general population African Americans are abstinent their entire life at higher rates than Caucasians (Barr, Farrell, Barnes, & Welte, 1993; Barnes & Welte, 1988; Hilton, 1998; Knupfer, 1989). These findings indicate that while African Americans are exposed to risk factors associated with drug abuse, they also experience significant protective factors leading to lifelong abstinence.

Although representing 12.3% of the U. S. population, African Americans represent 49% of all persons living with HIV/ AIDS (PLWHA) cases (CDC, 2006). Within this subset of African American PLWHAs a significant proportion report risk factors related to drug use, including injection drug use (IDU; 53.8% of all persons with IDU-related infections are African American) as well as risk factors associated with noninjection drug use (CDC, 2006). In addition, the awareness of the relationship of noninjection drug use to HIV risk has grown. Specifically, crack cocaine smokers have been found to be three times more likely to be infected with HIV than nonsmokers (Friedman et al., 2003), are less likely to adhere to medical care once infected (Sharpe, Elam-Evans, Fleming, Lee, & Nakashima, 2004), and more likely to continue high-risk sexual behaviors after being diagnosed with HIV (Campsmith, Nakashima, & Jones, 2000). Use of crack cocaine can contribute to the spread of the epidemic when users trade sex for drugs or money, or when they engage in risky sexual behaviors

that they might not engage in when not under the influence. (Sharpe, 2001; Weiss, Kluger, & McCoy, 2000; Ross, Teng, Duncan, Hwang, & Leonard, 1999; Cottler et al., 1998).

Importantly, substance abuse treatment can be effective in reducing HIV risk among crack cocaine users (Hoffman, Boyd, Klien, & Clark, 1998). However, in order for an individual to benefit from substance abuse treatment services they must first be retained in these services. Traditional approaches to substance abuse treatment may be problematic among African Americans given unfavorable views of available treatments (Longshore, Hsieh, & Anglin, 1993) and distrust of mainstream social services (Aponte & Barnes, 1995). Furthermore, traditional middle-class Euro-American intervention and treatment models may not be appropriate for many African Americans at risk (Cochran & Mays, 1993) as these models assume that people have the necessary resources and barriers to remaining in treatment are not often considered. These may be contributing factors to some African Americans completing or being transferred to other treatment providers at lower rates than any other racial group (Treatment Episode Data Set, data received through 2006).

Studies of the effectiveness of substance abuse treatment have yielded one consistent finding; time in treatment is a significant predictor of positive treatment outcomes (Erschoff, Radcliffe, & Gregory, 1996; Hubbard, Craddock, Flynn, Anderson, & Etheridge, 1997; Putt, 1999; Simpson & Sells, 1982). Several factors have been examined in relation to retention in substance abuse treatment and have yielded mixed and sometimes contradictory results. These factors include: case management, treatment setting, gender, drug of abuse, employment, problem severity, coercion, age, clients' perceptions of therapists, and homelessness. In addition, race has also been examined as a factor in retention.

Program Description

The program under study was designed for the treatment of homeless men, specifically those at risk for HIV infection. Residential treatment is indicated for persons with more severe drug problems, and in the case of homeless clients serves the purpose of transitional housing. The program is based on a combination of the Minnesota model and therapeutic community. The adaptation of the Alcoholics Anonymous (AA) philosophy, abstinence only as the goal, and a focus on teaching the client to live alcohol and drug free as well as a professional staff driving the decisions are adapted from the Minnesota Model. The program draws the use of the milieu, the highly structured daily regimen and the extended length of stay from the therapeutic community model. Clients commit to complete at least 3 months of treatment, a 12-Step curriculum (Recovery Dynamics), and to acquire both a job and a place to live prior to leaving treatment. Clients are able to work or attend school during their stay at the center. Two counselors are on staff at any given time as well as a graduate of the program who remains as the resident manager. During the time of this study, the staff consisted of an African American lead counselor and a Caucasian secondary counselor and resident manager.

Substance Abuse Treatment Retention

Three retention factors mentioned above pertinent to this study as well as racial differences in substance abuse patterns and treatment outcomes will be reviewed. Those factors are (a) case management, (b) drugs of abuse, and (c) coercion.

Case Management

Studies of case management for substance abusers have been conducted to determine its effect on receipt of Temporary Aid to Needy Families (TANF; Morgenstern, McVeigh, Morgan, Blanchard, McCrady, & Padina, 2006), its cost effectiveness (Saleh et al., 2006), its impact on care continuity (McClellan, Weinstein, Shen, Kendig, & Levine, 2005), and predicting postprimary treatment services (Rapp, Seigal, Li, & Saha, 1998). The relationship of case management on substance abuse treatment retention has been studied by Rapp and coworkers (1998). In a study of 632 substance abusing veterans entering outpatient treatment, Rapp et al. (1998) randomly assigned clients to either a strengths based case management ($n = 313$) or noncase management groups ($n = 319$) to determine whether case management impacted substance abuse treatment retention. The participants in the study were predominantly male (98.9%) and African American (75%). The authors found

that case management predicted a significant amount of variance in the length of postprimary treatment aftercare, suggesting that this factor may impact the retention rates of African American men.

Drugs of Abuse

Drug of abuse has also been shown to have a relationship to treatment retention. Veach, Remley, Kippers, and Sorg (2000) in a study of 509 men and women in outpatient treatment found that participants who reported cocaine as the primary drug of abuse had lower rates of treatment retention, while alcohol and other drug abusers had higher rates. Fishman, Reynolds, and Riedel (1999) studied the Smithers Evening Rehabilitation program, a program designed for people to maintain employment during the day (n = 488), and found that cocaine abusers had the highest rates of attrition, while other drug users had the next highest attrition rates, and alcohol users had the lowest drop out rates. In a smaller study (n = 268), McCaul, Svikis, and Moore (2001) found that drug of choice initially predicted retention but was no longer a significant factor when race was controlled. This finding has particular importance, given the higher rates of cocaine use among African Americans entering substance abuse treatment (SAMHSA, 1999a).

Coercion

Two studies reported that being referred by the criminal justice system or being on probation predicted a lower rate of retention in treatment (Claus & Kindleberger, 2002; Vaughn, Sarrazin, Saleh, & Huber, 2002). Maxwell noted that 40% to 50% of referrals to community-based substance abuse treatment providers come from the criminal justice system (as cited in Farabee, Prendergast, & Anglin, 1998). Farabee et al. (1998) argued that many drug users would not enter treatment at all were it not for the external motivation provided by coercion. Schnoll, Goldstein, Antes, and Rinella (1980) found that participants in their study who came directly from prison to treatment were more likely to complete inpatient treatment than those who did not. This discrepancy in the study results might be explained by differences in the programs being studied and the emphasis placed on internal motivation (Farabee et al., 1998).

Marlowe et al. (2001) focused more directly on coercion than any of the aforementioned articles in their study of 100 men and women (52% Caucasian and 35% African American) in methadone maintenance treatment. Marlowe, et al. (2001) measured coercion as a scaled variable as opposed to a nominal one and included coercion from multiple sources, not just criminal justice (i.e., financial, social, and family). The use of a higher level of measurement and a broader conceptualization of coercion make this study more specific than the others. Although all of the coercive variables correlated positively with retention, the findings from this study indicated that legal pressure and pressure from psychiatric or medical service providers was associated with the strongest positive correlations with participants' length of stay in treatment.

Race and Substance Use Patterns

It has been found in several large-scale studies across time that substance use patterns, prevalence, and treatment need and entry differ by race. In examining the differences in retention between Caucasians and African Americans, it is important to recognize all of the possible differences in the drug user as defined by race in order to determine what factors may account for differences in their retention in treatment.

Some of the more salient differences in pattern, prevalence, and treatment need and entry include African Americans having a later peak age range of drug use than Caucasians (Gurnack & Johnson, 2002; SAMHSA, 1999a), and resultantly, African Americans are older when entering substance abuse treatment (SAMHSA, 1999b). Another important difference is that smoked cocaine is the most commonly reported substance of abuse by African American people entering substance abuse treatment (SAMHSA, 2004b).

Race, Substance Abuse Treatment Outcomes, and Retention

In adolescence, African American's have been found to have better outcomes from treatment than their Caucasian counterparts. In an analysis of data on adolescents from Drug and Alcohol Treatment Outcome Study (DATOS), Rounds-Bryant and Staab (2001) sought to identify posttreatment differences by race. They found

that African American respondents were less likely than their Caucasian counterparts to be involved in serious illegal activity. Other than this posttreatment difference, they found no significant differences.

In adulthood, African American's have poorer outcomes from treatment. A second study that considered the relation-ship of race and treatment outcome with three matched groups of 847 adult participants was conducted by Moos, Moos, and Finney (2001). Participants were drawn from the Veterans Affairs national outcomes data and were matched based on baseline problem severity. The authors found that those identifying as African American were 1.58 times more likely to deteriorate posttreatment than their counter parts from other racial groups. With the limited research available, race seems to be associated with outcomes positively for adolescents in terms of their criminal activity, but negatively among adults when considering multiple outcome measures.

More research on race and retention exists than on outcomes, but there is still a dearth of information to understand the interaction of these factors. Several studies have found a correlation between race and treatment retention (McCaul et al., 2001; Stack, Cortina, Samples, Zapato, & Arcand, 2000; Veach et al., 2000). McCaul, Svikis, and Moore (2001) in their study of 268 outpatient treatment clients found that race was a significant predictor of time in treatment, and that African Americans were not retained as long as Caucasians. In this study, 51% of respondents were Caucasian and 47% were African American (M. E., McCaul, personal communication, December 12, 2007).

Veach et al. (2000) employed an ex post facto analysis of 509 men and women that received services from an outpatient clinic, to examine a number of possible factors on retention. In this study, race was not a significant predictor of retention. The racial make-up of the center under study was 59% Caucasian and 41% African American. Finally, Stack et al. (2000) con-ducted a post hoc analysis of records on 340 veterans (predominately male 92%) in a 120 day inpatient treatment program. The authors found that 71 % of those clients identifying as African American completed treatment compared to only 49% of Caucasian clients. In this study, 66% (225) of the respondents identified as African American.

These findings seem to indicate a possible interaction between racial make-up of the sample, the type of treatment, and the retention of persons. In the one study of inpatient treatment, the majority race in the study was retained longer, in this case African Americans. This finding does not hold for outpatient treatment modalities.

Research Questions

There are limited data on the relationship of client race and treatment outcome and limited research considering retention and race, and no recent articles studying retention in long-term residential treatment, resulting in a need for further research in this area. Given the dearth of research, three exploratory research questions are posed for this project:

1. Do African American men complete treatment at lower rates than Caucasian men?

2. Does race predict time-in-treatment?

3. Are African American men retained in treatment for fewer days than Caucasian men?

Method

The methodology used in this study was a comparison of two discrete groups (Campbell & Stanley, 1963) defined by race. In this study, only African Americans and Caucasians were represented in the population under study. Data for this study were collected over 3 years from a long-term, residential treatment center for homeless men. The participants were administered the Addiction Severity Index within 5 days of treatment entry, and this was included in the analysis as well as demographic variables, length of stay in treatment,

completion of treatment, and the receipt of case management. This study and all protocols/ processes associated with it were approved and overseen by the University of Louisville's institutional review board.

Table 1. Comparative Demographics

	African Americans		Caucasians	
Major Drug Abused	*n*	%	*n*	%
Cocaine	19	67.9	10	13.5
Alcohol	4	14.3	36	48.6
Multiple	2	7.1	12	16.2
All other drugs	3	10.7	16	21.7
Totals	28	100	74	100
Received case management	7	28	33	50
Coerced by criminal justice	12	41.4	52	66.7
Number renting or owning a home	12	41.4	8	10.3
Mean age	Mean	*SD*	Mean	*SD*
	35	8.1	29.5	9.5
Mean education completed	12.3	1.6	12	2
Mean monthly income in last 30 days	US$71.8	US$176.3	US$106	US$475.6
Mean days experienced alcohol problem in last 30 days	2.9	7.8	5	9.6
Mean days experienced drug problem in last 30 days	6.7	11.1	5	9.6
Mean days receiving AOD treatment (including self-help) in last 30 days	15.7	13.5	16.1	14.3
Mean days experienced psychiatric/ emotional problem in the last 30 days	10.9	11.9	9.9	11.6
Mean days prescribed psychiatric medication in the last 30 days	.43	1.7	.07	.27
Mean days incarcerated in the last 30 days	1.3	5.2	2.8	7.4
Mean length of stay in days	114.7	95.9	157.4	112.6

The Addiction Severity Index (ASI) was used to document lifetime drug use and frequency of use within the past 30 days. The ASI is a standardized interview widely used to determine treatment needs and to assess improvement during and after treatment. High levels of inter-rater agreement have been reported for the ASI (r = .74–.99) (McClellan, Luborsky, Woody, Druley, & O'Brien, 1983). The ASI has been reported to be valid and reliable with a variety of different populations (Alterman, 2001; Appleby, 1997; Leonhard, 2000; McClellan et al., 1985; Zanis, 1994). Brown, Alterman, Rutherford, Cacciola, and Zaballero (1993) in their study including 260 African American respondents (55.6% of the sample) report a mean intra-class correlation of .92 on the seven composite scores (p. 27 1).

Sampling Method

A sample was not drawn for this study; rather, the entire population of the treatment center for the years under study was included (N = 106). This resulted in an adequate number of clients to consider multiple factors in predicting treatment retention.

Data Analysis

Analyses were conducted using SPSS version 16. Initial tests included basic descriptive analysis, t-tests, and χ^2 tests. Linear regression analysis and life tables were then developed to further understand the relationship of race to time in treatment. For survival regression models, possible predictors of attrition were identified through the literature search and obtained through the baseline interview data.

Description of Clients

The men involved in this study were largely Caucasian (n = 78, 72%). The mean age was 31 and ranged from 18 to 58. The amount of money the men made in the 30 days prior to treatment entry ranged from 0 to US$6,000, with a mean of US$262. In the 30 days prior to entry, 83% of the men were homeless, 10% were renting houses or apartments, and 7% owned their own homes. The mean length of stay was 145 days with a minimum of 4 days and a maximum of 426.

To illustrate the similarities and differences between the two racial groups Table 1 provides a comparison of African American and Caucasian clients on several variables. In concert with the literature, the most commonly reported drug of abuse for African Americans was cocaine and for Caucasians was alcohol. Differences in

receipt of criminal justice coercion and case management are significant and discussed further in a latter section.

In terms of housing, there is a practical difference between African Americans and Caucasians. To ensure that housing was not an extraneous variable better explaining the differences in retention than race, several statistical tests were run testing the impact of housing status on several retention variables. A χ^2 test of independence was run testing the effect of housing status on treatment completion and it did not demonstrate a significant difference in the two groups. An independent sample *t*-test was run examining the difference in mean number of days in treatment by housing status and did not yield significant differences (Renter/owners = 147 days and Homeless 143.3 days, $t = .128$, $p > .05$). These findings assured the researchers that housing was not an extraneous variable. None of the remaining variables demonstrated significant differences by race.

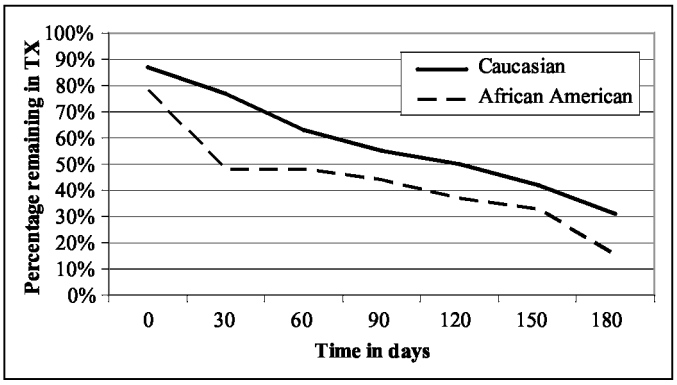

Figure 1. Retention Life Table—African Americans and Caucasians

Results

A w2 test of independence compared the frequency of completion for African American and Caucasian participants noted in the first research question. Caucasian participants were more likely to graduate (46%) than African Americans (1 1%), ($\chi^2 = 10.55$, $p < .01$). Additionally, an independent samples t test comparing the mean number of days in treatment of the Caucasian and African American groups was calculated. This test yielded no significant difference between the two groups (Caucasians = 157 days and African Americans 114 days, $t = 1.8$, $p = .056$) but does indicate a trend toward significance (see Table 1).

Whether race predicts time in treatment was tested by calculating a simple linear regression predicting participants' length of stay in treatment based on race. The regression equation was not statistically significant ($F(1, 104) = 3.268$, $p = .074$) with an $R^2 = .03$. However, these findings indicated that Caucasians stay in treatment an average of 49 days longer than African Americans. Although race was not a significant predictor of length of stay, there is a trend toward this (with a larger n this finding would likely be significant) and is an important result given the limited knowledge of the relationship between race and treatment retention in long-term residential treatment.

Survival analysis was used to consider the role of race in treatment retention. The survival lines in Figure 1 illustrate the time to leaving treatment between African Americans and Caucasians. The survival lines split at 60 days, at 60 days 63% of the Caucasian participants were still in treatment compared to only 48% of the African Americans. The estimated risk of leaving treatment prior to the 180 day mark was 31% for Caucasians and 15% for African Americans. The Wilcoxon-Gehan test indicates that the trajectory lines are not significantly different (3.267, df = 1, p = .07 1). The median times in treatment for African Americans and Caucasians were 58 days and 150 days respectively (see Figure 1).

African Americans in this sample are coerced into substance abuse treatment at lower rates than Caucasians. Sixty-seven percent of Caucasian participants were in treatment via coercive referrals, compared with only 41% of African Americans. This finding is of particular interest as Marlowe et al. (2001) in their study of the effect of coercion on treatment retention note that coercion by the criminal justice system is the single strongest coercive variable in prediction of retention. Life tables were also created to compare retention by race while

holding the coercion variable constant. The difference in survival lines became less pronounced among participants of both races when comparing coerced and noncoerced, respectively (Coerced: .502, df = 1, p > .05; noncoerced: 1.452, df = 1, p > .05).

Criminal justice coercion was a significant predictor of time-in-treatment in this study as indicated by the Wilcoxon-Gehan (4.081, df = 1, p <.05). The life table in Figure 2 further demonstrates the difference in coerced and noncoerced participants. The survival lines split at 30 days with only 58% of the noncoerced group surviving the 30-day interval and 77% of the coerced group surviving this interval (see Figure 2).

Finally, case management has been demonstrated to effect time in treatment in the literature. This variable was held constant to determine whether race continued to have an impact on retention. A life table was created showing four survival lines representing African Americans with and without case management and Caucasians with and without case managers. The Wilcoxon-Gehan indicates a significant difference in the survival of white clients with case managers compared to those without (23.851, df = 1, p < .01). A significant difference between African Americans with and without case managers was not found (1.483, df = 1, p > .05).

Discussion and Applications to Practice

The lack of significance of race alone in predicting retention may be due to a combination of factors: the statistical power of a nominal variable in predicting change in a continuous variable is low, the inadequacy of the sample size, and the variation in services received by race. Cohen (1988) noted that when a continuous variable is converted to the dichotomous level approximately one third of its statistical power is lost. A continuous measure of racial identity, which is more accurate as ones race is not a dichotomous factor, may have made this finding statistically significant. Further, race is likely only a proxy for other factors such as institutional racism and racial tension within the treatment center. Additionally, other factors that vary in relation to ones culture (e.g., family relations, cultural norms, etc.) may also impact these findings and as such race alone may not account for all of the variance that a more direct measure of these factors might.

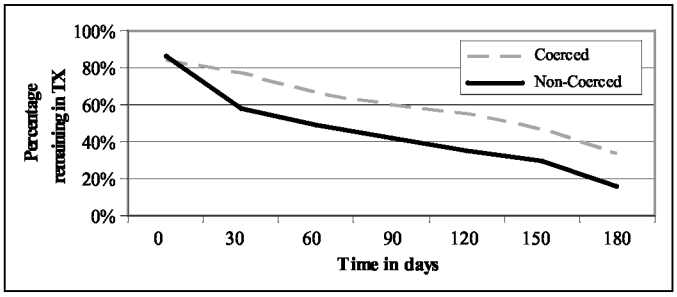

Figure 2. Retention Life Table—Coerced and Noncoerced Participants

The sample size provided adequate power to conduct bivariate analyses but not multivariate, when considering race. When the participants were partitioned into both racial groups and recipients of case management, only five African Americans had received case management. Similarly, only 10 African Americans were prompted to enter treatment by the criminal justice system. Thus, the lack of significance when considering the interaction of race and case-management is likely affected by the small number of participants, as the proportions appear on the face to be quite similar.

Bowser and Balil (2001) used a qualitative case study approach to examine the effect of race on the process and out-come of drug and alcohol treatment for African Americans. These authors found several themes associated with internalized racial discourse: (a) internalized beliefs of racial inferiority, (b) connection of the domination of African Americans by Caucasians to the institution of treatment, and (c) anger and aggressiveness in African American men that arises from multigenerational oppression. These factors hinge on the sociopolitical culture and its impact on the individual psyche as opposed to internal cognitive and affective mechanisms. This has prompted advocacy for treatment approaches that address these systemic problems in addition to the problem behavior of drug use (Buka, 2002; Rowe & Grills, 1993; Veach et al., 2000). Further research in this area might be conducted using scalar variables for the factors Bowser and Balil described in their qualitative study.

Disparities associated with race were noted in the receipt of criminal justice coercion and case management, the strongest variables in the prediction of retention. This disparity may be accounted for by the existence of systemic racism in the criminal justice system and lack of access to adjunctive services for African American people. Both the increased rate of entry into prison by African Americans (Feilzer & Hood, 2004) and the lowered access to adjunctive services (Kuno & Rothbard, 2005) have been discussed in the literature. Future studies, with larger samples, might further examine how these factors impact racial differences in retention to treatment.

Several issues arising from this research are applicable to practice. This study explored retention in a long-term residential treatment center, and as such clients work, eat, and go to self-help meetings together. Hudson and Hines-Hudson (1999) found in a survey of the same geographic area where this study was conducted that racial prejudice and racist ideas continue to be quite prevalent. Retention of African Americans would likely be affected by this, and Caucasian clients could as well depending on the majority racial group in the center. In inpatient treatment settings, the clients' attitudes toward one another become a more important factor as not only do participants need to maintain motivation for treatment but they must also have a level of comfort in the treatment setting in order to be retained. Additionally, given the ongoing racial tension in this country, increased education and training focused on cultural competency is needed.

Additionally, as Bowser and Balil (2001) report, African American's may connect domination by whites to the institution of treatment. To overcome this barrier treatment for African Americans should draw on Afro-centric concepts in addition to other evidence-based practices. Examples of this may include connecting recovery from addiction to liberation, or resilience.

Findings regarding the differential experience of coercion may be tied to differential treatment for African Americans in the criminal justice system. The differential treatment of African Americans in regard to capital sentencing has been supported in several studies (see Banks, Eberhardt, & Ross, 2006 for a review). Additionally, in England, Feilzer and Hood (2004) found in a comparative study of the experiences of Black youth compared to Whites that at all points of contact with the criminal justice system from initial contact with police to sentencing that Black youth were more likely to receive more severe consequences. This may be related to the lack of coercive treatment entry as this is a less severe response to drug-related crime than incarceration. To combat this, providers must serve as advocates for clients in the criminal justice system.

In relation to case management, Kuno and Rothbard (2005) have noted that African Americans are much less likely to receive adjunctive resources such as case management than are Caucasians. As noted above case management was the strongest predictive variable of time in treatment but was only available to five African American participants. Again, this is an issue that requires advocacy on the part of providers for African American clients. In addition, funding should be targeted at increasing these services, specifically, for African Americans.

Finally, the success of substance abuse treatment is an excellent means to HIV risk reduction. Crack cocaine users have elevated rates of HIV infection (Friedman et al., 2003) and need extended periods of treatment beyond the means of African American in this study in order to become abstinent. Additionally, drug use has been identified as a factor in reduced antiretroviral treatment adherence (Sharpe et al, 2004), engaging in the sex-trade, and engaging in high-risk sexual behavior (Sharpe, 2001; Weiss et al., 2000; Ross et al., 1999; Cottler et al., 1998). Substance use reduction and abstinence offer many benefits and given the current epidemic of HIV among African Americans, increasing time in treatment is an important element to a holistic HIV risk reduction strategy.

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